

UNIVERSITY OF TORONTO  
UNIVERSITY EXTENSION



# COURSE IN RADIOGRAPHY

**A Training Course To Qualify Young Men and Women  
As X-Ray Technicians**

The Course opens on MONDAY, October 5th, 1953. Applications should reach the Department of University Extension by June 30th if possible. Late applications will not be considered after September 5th. Students will register in Room 223, SIMCOE HALL.

ADDITIONAL COPIES OF THIS PROSPECTUS MAY BE OBTAINED FROM THE DIRECTOR, UNIVERSITY EXTENSION, UNIVERSITY OF TORONTO, TORONTO 5, ONTARIO, CANADA.

MAY, 1953.

UNIVERSITY OF TORONTO  
UNIVERSITY EXTENSION

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THE UNIVERSITY

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# TEACHING STAFF FOR THE COURSE IN RADIOGRAPHY

Director of the Course—D. T. BURKE, M.D., C.M., D.M.R. (LOND.)

- ANATOMY— D. T. BURKE, M.D., C.M., D.M.R. Chief Radiologist, Sunnybrook Hospital.
- PHYSICS— D. S. AINSLIE, M.A., PH.D., Associate Professor of Physics.  
Miss E. J. ALLIN, M.A., PH.D., Assistant Professor of Physics
- PATHOLOGY— H. J. BARRIE, B.M., B.CH., (OXON.) Professor of Pathology.
- PHYSIOLOGY— F. C. MONKHOUSE, B.A., PH.D., Research Associate in Physiology.
- RADIOGRAPHY—A. C. SINGLETON, M.B.E., E.D., M.D., F.F.R. (LOND.) F.A.C.R. Professor of Radiology.  
D. T. BURKE, M.D., C.M., D.M.R. (LOND.) Associate in Radiology.  
E. H. SHANNON, M.D., F.F.R., (LOND.) D.RAD., Associate in Radiology.  
C. L. ASH, B.SC., M.D., D.RAD., Assistant Professor of Radiology.  
L. HARNICK, M.D.  
J. D. MUNN, M.D., D.RAD.  
R. BORRON, M.D.  
A. R. MCGEE, M.D.  
E. STEWART, M.D.  
D. G. WOLLIN, M.D.

## HOSPITALS GIVING PRACTICAL TRAINING

Sunnybrook Hospital, Toronto.  
Toronto General Hospital, Toronto.  
Toronto Western Hospital, Toronto.  
St. Michael's Hospital, Toronto.  
Hospital for Sick Children, Toronto.  
St. Joseph's Hospital, Toronto.  
Toronto East General Hospital, Toronto.  
Women's College Hospital, Toronto.  
The Radium Institute, Toronto.

# UNIVERSITY OF TORONTO

## UNIVERSITY EXTENSION

### GENERAL INFORMATION

The Course in Radiography, conducted by the Department of University Extension, is the first part of a two-year training course to qualify young men and women as X-ray technicians. One year is taken at the University and the other in hospital.

During the first eight months students are given didactic, theoretical education along with the practical training. Students must attend at least 80% of the prescribed lectures during the first year. The practical work usually amounts to three days per week of the University year. At the termination of the eight months of combined lecture and practical training, the students continue to rotate in the X-ray Departments of participating hospitals, doing practical work only, for the rest of their first year. Students may, if they wish, secure employment at any of these hospitals for the last four months, should a vacancy occur, or at any other hospital approved by the University. These other hospitals will be limited to those having a certified radiologist and a registered technician in attendance.

At the end of the second year, candidates who have passed the University examinations on theoretical work and the oral examinations of the first year, and have been suitably employed during the second year on practical work, will be eligible for the examinations of the Canadian Society of Radiological Technicians. They will be recommended for time credits for the first year if the Course is satisfactorily completed.

A certificate will be issued by the Canadian Society of Radiological Technicians to successful candidates.

### ADMISSION REQUIREMENTS

Applications are invited from men and women who have Grade XIII standing (Ontario or British Columbia) or complete Grade XII obtained in other Provinces. Should a candidate not have completed Grade XIII standing, but have high standing in Grade XII (Junior Matriculation), his application will be given favourable consideration. A small photograph of the applicant must be sent with application, together with academic certificates.

By order of the Board of Governors every person admitted to the University must at the time of his or her first medical examination by the University Health Service present satisfactory evidence of successful vaccination or must be vaccinated by the examining physician. Applications are requested not to send vaccination certificates with the application forms.

### REGISTRATION AND ENROLMENT

Students whose applications have been accepted will register at the offices of the Department of University Extension, Room 222, Simcoe Hall. Notification of the date of registration will be sent with the letter of acceptance. After this date no student will be allowed to register and enrol without special permission.

All students are on probation during the first term. This means that any student who fails in the December examination, who is irregular in attendance, or who is found unsuitable for this type of work may be asked to withdraw. A limited number of qualified technicians may enrol in individual subjects such as PHYSICS, PHYSIOLOGY, PATHOLOGY, AND ANATOMY.

### DISCIPLINE

Students are required to attend the courses of instruction and the examinations in all subjects as prescribed.

No initiation ceremony involving physical violence, personal indignity, interference with personal liberty, or destruction of property may be held.

Permission to invite any person not a member of the faculty of the University to preside at, or address a meeting of, any student group must be obtained.

Candidates are listed as 'occasional' students and are not eligible for membership in Hart House, the Women's Union, or the Athletic Association.

### EXAMINATIONS

A candidate will not be admitted to an examination unless he has paid all the fees due from him.

Representations on the part of the candidates with regard to the April or May examinations and applications for consideration on account of sickness, domestic affliction, or other cause, must be filed with the Director of University Extension before May 24th together with doctors' certificates or other evidence. In the case of the September examinations such applications and certificates must be filed before the close of the examination.

A student who is conditioned in a subject at the annual examination of the FIRST YEAR must pass a supplemental examination in that subject before he or she will be credited with this time towards the R. T. requirements.

### CONDITIONS FOR ACADEMIC STANDING

Records of attendance will be kept throughout the session and there will be a term test given in each subject.

In order to obtain standing at the annual examination of the First Year a candidate must pass in all, or all but two, of the subjects of that year: in order to pass in a subject he must obtain at least 50% of the aggregate of the term and examination marks in the subject.

A student who obtains standing at the April or May examinations in all subjects except two may write supplemental examinations in these two subjects in September.

A successful candidate will be graded in each of the subjects in which he has passed and in the course as a whole according to the following schedule:

Grade "A"	— 75% to 100%
Grade "B"	— 66% to 74%
Grade "C"	— 60% to 65%
Grade "D"	— 50% to 59%

### FEES

University fees are payable at the office of the Chief Accountant, Simcoe Hall, which will be open for the receipt of fees from 9 a.m. to 1 p.m. daily, except Saturday. Cheques in payment of these fees should be made payable to the University of Toronto.

Each student will be required to pay at least the first term instalment of fees on or before the opening date of the session and before he can receive his card of admission to lectures from the Director of University Extension.

Any student who has not paid in full the fees due in the first term will not be allowed to proceed with the work of the second term.

The second term instalment of fees is payable on or before January 16th. After this date an additional fee of \$1.00 a month will be imposed until the whole amount is paid. All fees for the session must be paid in full before the annual examinations.

All cheques must be payable at par in Toronto.

Each student enrolled in the Course on Radiography must pay annual fees according to the schedule below.

The fee for the instruction provided during the first year is \$160.00 payable, if desired, in two instalments; at the time of registration \$86.00, and \$86.00 on or before January 16th.

There is no examination fee.

The fee for a supplemental examination is \$10.00.

## SYLLABUS

Lectures and practical work will occupy both forenoons and afternoons throughout the session.

### (1) ANATOMY

- (a) The lectures and demonstrations are given under the supervision of Dr. D. T. Burke, Chief Radiologist, Sunnybrook Hospital. The Course consists of lectures and demonstrations for one and one-half hours each week at night for a total of forty-five hours.
- (b) There will be twelve evening sessions at Sunnybrook Hospital under the direction of Dr. D. T. Burke. These will consist of demonstrations on patients of the application of the anatomy lectures to positioning in radiography.
- (c) A series of twelve lectures will be given under the supervision of Dr. D. T. Burke, at Sunnybrook Hospital. These will consist of film demonstrations of radiographic anatomy and the application of this anatomy to the detection of faults and positioning.

### (2)

- (a) PRINCIPLES OF X-RAY TECHNIQUE.
- (b) RADIOGRAPHIC POSITIONING.
- (c) RADIOGRAPHIC PROCEDURE.
- (d) APPARATUS.
- (e) THERAPY.

At least one hundred and fifty hours will be assigned to these important subjects as follows:

## SUNNYBROOK HOSPITAL

Dr. D. T. Burke and his staff will lecture on:

- (a) *Principles of X-ray Technique.*

Cleanliness; Economy; Charts; the Inverse Square Law; Density; Safety; Immobilization; Breathing.



- (b) *Radiographic Positioning*  
Skull; Mastoids; Mandible; Temporomandibular Joint; Shoulder Girdle; Upper Extremities; Cervical Spine; Dorsal Spine; Lumbar Spine; Pelvis and Hip; Knee; Ankle and Foot; Chest; Abdomen.
- (c) *Radiographic Procedure*  
Pyelography (Intravenous); Pyelography (Retrograde); Cholecystography; Myelography; Pyelography.
- (d) *Apparatus*  
Timers (Synchronous, impulse, electronic); Testing Timers; kymographs; Planographs.

#### **TORONTO GENERAL HOSPITAL AND RADIUM INSTITUTE**

Dr. A. C. Singleton and Dr. C. L. Ash and their staffs will lecture on:

- (b) *Radiographic Positioning.*  
Army Foot Technique.
- (c) *Radiographic Procedure.*  
Bronchography; Ventriculography; Encephalography; Cerebral Arteriography.
- (d) *Apparatus.*  
Magnetic Switches; Transformers; Auto-Transformers; Ammeters; Voltmeters; Stabilizers; Rectification; Diodes; X-ray Tubes; X-ray circuits.
- (e) *Therapy*  
Duties and responsibilities of the therapy technician; Therapy physics; Protection; Use of 200 K.V. Apparatus; Use of 400 K. V. Apparatus; Contact Therapy; Treatment of Carcinoma of the Breast; Treatment of Carcinoma of the Oral Cavity; Treatment of Gynecological Malignancy; Radium Therapy.

#### **SICK CHILDRENS' HOSPITAL**

Dr. J. D. Munn and his staff will lecture on:

- (b) *Radiographic Positioning (Children)*  
Skull, Sinuses; Mastoids; Extremities; Spine; Pelvis; Abdomen.
- (c) *Radiographic Procedure*  
Upper G.I. Examination; Lower G.I. Examination; Pyleography; Angiocardiography.

#### **ST. MICHAEL'S HOSPITAL**

Dr. E. H. Shannon and his staff will lecture on:

- (c) *Radiographic Procedure*  
Dental radiography; Cardiac Radiography.

#### **TORONTO WESTERN HOSPITAL**

Dr. L. Harnick and his staff will lecture on:

- (b) *Radiographic Positioning.*  
Handling the injured patient; Traumatic Upper Extremities; Traumatic Lower Extremities; Traumatic Pelvis; Smith-Peterson Nailing; Traumatic Thorax; Traumatic Skull.

#### **ST. JOSEPH'S HOSPITAL**

Dr. R. Borron and his staff will lecture on:

- (a) *Principles of X-ray Technique*  
Magnification; Distortion; Detail.

- (b) *Radiographic Positioning*  
Ribs; Sternum; Clavicle.
- (c) *Radiographic Procedure*  
Stereoradiography.
- (d) *Apparatus*  
Films; Emulsions; Film Holders; Grid Types; Grid ratio; Colon; Diaphragms; The nature of the X-ray Beam; Reflection; Refraction.

#### **TORONTO EAST GENERAL HOSPITAL**

Dr. A. R. McGee and his staff will lecture on:

- (c) *Radiographic Procedure*  
Radiography of the Upper G.I. Tract; Radiography of the Lower G.I. Tract.

#### **WOMEN'S COLLEGE HOSPITAL**

Dr. Elizabeth L. Stewart will lecture on:

- (c) *Radiographic Procedure*  
Hysterosalpingography; Placentography; Pelvimetry.

#### **(3) DARK ROOM CHEMISTRY**

Four hours of instruction will be given at the Toronto General Hospital on this subject.

- (4) A TOTAL OF FORTY-FIVE HOURS will be given in evening lectures in ELECTRICITY; ATOMIC PHYSICS, RADIATION, in the Department of Physics, University of Toronto.

#### **(6) PHYSIOLOGY**

Fifteen hours of evening lectures at the University of Toronto, will be given in the principles of human physiology.

#### **(7) PATHOLOGY**

Fifteen hours in evening lectures at the University of Toronto, will be devoted to the discussion of the changes brought about by disease; process of inflammation, tissue repair and healing of wounds; disturbances of the circulation of the blood, chronic infection, benign and malignant tumors.

### **ACCOMMODATION**

Students in Radiography are obliged to make their own arrangements for accommodation. Lists of suitable boarding houses may be obtained from the Students' Administrative Council, Hart House, University of Toronto.

### **RAILWAY FARE**

Students travelling from stations in Canada may purchase a student's return ticket from local agents. This ticket must be signed by the Director of the Department of University Extension before the student returns home at the end of the session. This ticket will be valid for thirty days from the closing date of the session. Consult local agents of Canadian National or Canadian Pacific Railways.

A calendar of the Course in Radiography and an application form may be obtained from the Director, University Extension, Simcoe Hall, University of Toronto, Toronto 5, Canada.